I1-022

THE PACIFIC RIVERS COUNCIL

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July 25, 1997

Kate Hansel
CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear Ms. Hansel:

Enclosed please find ten (10) copies of our Inquiry Submittal for the CALFED Bay-Delta Category III RFP. We anticipate submitting a Full Proposal for the next funding cycle, currently scheduled for November, 1997.

If you have any questions about our proposed project, tentatively titled the Deer Creek and Mill Creek Sediment Reduction Project, please do not hesitate to contact me. I look forward to your response to our Inquiry Submittal and any information you can provide that will facilitate the project planning process.

Sincerely,

Deanna Spooner

Deanna Spooner
California Projects Director

I1-022

INQUIRY SUBMITTAL
CALFED CATEGORY III FUNDING
JULY 1997

1. **Project Title:** Deer Creek & Mill Creek Drainages Sediment Reduction Project.

2. **Applicant:** Pacific Rivers Council.

3. **Project Description and Primary Objectives:** The Deer Creek & Mill Creek Drainages Sediment Reduction Project (Project) is designed to address a persistent problem that affects nearly every tributary feeding into the Bay-Delta ecosystem: chronic sediment loading. Specifically, by correcting deficiencies in poorly situated and maintained road systems--obliterating the most problematic ones and storm-proofing others--we can significantly reduce accelerated erosion and the deposit of fine sediments in the Deer Creek and Mill Creek Drainages, key Sacramento River tributaries. The recent Meadowbrook Associates report shows that the upper watersheds, in particular, are highly susceptible to road-related erosion. Sedimentation in these drainages not only affects hydrologic and geomorphic functions but profoundly and negatively impacts Spring run chinook spawning and rearing habitat. Fine sediments from roads and other land-based activities are transported into spawning streams and cover the gravel, eliminating suitable spawning beds, smothering existing salmon redds, and generally degrading the aquatic habitat upon which salmon and native resident species depend for survival.

Any protection and restoration efforts focusing on recovering at-risk aquatic species within the greater Bay-Delta system will ultimately fail unless the physical and ecological integrity of the upper watersheds are restored and maintained. We need to focus restoration efforts on entire drainages and address the problem in a holistic manner. This programmatic approach may also provide the key to avoiding a Federal Endangered Species Act listing of the Spring-run chinook. The proposed Project could also act as a model for future sedimentation reduction efforts within the Sacramento River drainage.

The Project will be completed in three stages: careful analysis and cost estimate of already identified problem areas (i.e., specific road segments and culverts), design and treatment of these areas, and long-term monitoring and reporting on the effectiveness of the treatment.

4. **Justification for Project and Funding by CALFED:** This project targets priority habitat (instream aquatic habitat) and a priority species (Spring-run chinook salmon) of the CALFED Bay-Delta Program. It focuses on a species and habitat at high risk that have experienced great declines. Because sediments are often transported far downstream from the original disturbance site, this Project will have broad-reaching ecosystem benefits for the aquatic/riparian ecosystems within the targeted drainages, for the Sacramento River, and for the estuary at large. Therefore, this Project meets the primary objectives of the Category III funding criteria.

5. **Budget Costs and Third Party Impacts:** A preliminary estimate, based on the Meadowbrook Conservation Associates "Survey of Road-Related Sediment Sources in the Deer Creek and Mill Creek Watersheds," for the cost of design and treatment is $960,000, with an additional $80,000 per year for monitoring and reporting. Third party impacts relate primarily to the three largest landowners within the project boundaries: the U.S. Forest Service, Collins Pine Company, and Sierra Pacific Industries. All three parties willingly and enthusiastically participated in the Meadowbrook survey and are being included in discussions regarding the proposed project. This project will benefit all stakeholders in the Mill Creek and Deer Creek Drainages by improving watershed conditions and, potentially, averting a federal listing of the Spring run chinook salmon and the accompanying land-use restrictions of recovery and habitat conservation plans.

6. **Applicant Qualifications:** For ten years Pacific Rivers Council has advanced the watershed approach to river and species protection, which we have applied on the ground through long-term stream restoration and community projects. Our pioneering restoration strategy at Knowles Creek, in Oregon's Coast Range, is grounded on protecting the intact areas of the watershed and making sure the roads are stormproofed. As a result, populations of coho and chinook salmon are rebounding in the watershed. In Idaho we are working with the Forest Service, Bureau of Land Management, the State of Idaho, private landowners and several schools on the Willow Creek restoration and education project.

7. **Monitoring and Data Evaluation:** Long-term monitoring and assessment are key elements of the project, particularly in gauging the success of the road-treatments after large storm events. We will contract with an aquatic ecologist or similarly qualified field specialist to undertake the monitoring, data evaluation, and reporting aspects of the Project.

8. **Local Support/Coordination with Other Programs/Compatibility with CALFED Objectives:** As with all of our restoration projects, local support and coordination with other related programs are vital elements. In addition to working with large and small landowners, we will coordinate efforts with the Deer Creek and Mill Creek Watershed Conservancies. Other potential partners include Meadowbrook Conservation Associates , Pacific Watersheds Associates, the Sacramento River Preservation Trust, as well as farming and fishing associations. As stated above, the proposed project is completely compatible with CALFED objectives: it proposes a practical, cost-effective solution to a known threat to priority habitat and species within the greater Bay-Delta ecosystem.

I1-022

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U.S. Geological Survey
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25 July 1997

Kate Hansel
CALFED Bay-Delta Program Office
1416 Ninth Street, Suite 1155
Sacramento, California 95814

Dear Ms. Hansel:

Please consider this Inquiry Submittal for funding in the November, 1997 funding cycle of the Category III CALFED Bay-Delta Program. Note that my area code will change to 650 on 2 August.

Sincerely,

John Dingler
Oceanographer

Enclosures: 10 copies of two-page proposal

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CALFED BAY-DELTA PROGRAM INQUIRY SUBMITTAL
1997 CATEGORY III

Monitoring Tidal-Creek Changes at the Sonoma Baylands Wetland Restoration Site in North San Francisco Bay

John Dingler and Dave Cacchione
U.S. Geological Survey
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345 Middlefield Road, M.S. 999
Menlo Park, California 94025

Project Description and Primary Biological/Ecological Objectives: Since 1850, as much as 95% of the tidal wetlands in the San Francisco Bay estuary have been converted to other land types. Now, Federal, State, and local agencies are working together to expedite the restoration of selected areas. At one such site, the Sonoma Baylands Restoration Project, which is located on the northern edge of San Pablo Bay, dredged material from Oakland Harbor is being used to hasten the transformation of 350 acres of diked farmland to a tidal wetland. The increased currents caused by opening the restored area to tidal flow are expected to cause extensive erosion of the tidal creek adjacent to the breech. The U.S. Army, Corps of Engineers estimates that it may take another five to ten years before the tidal creek reaches an equilibrium configuration with the increased tidal flow. In support of the monitoring phase of the Sonoma Baylands project, we have developed a technique to monitor tidal-creek erosion in that tidal creek. Using that technique, we are in an excellent position to continue that monitoring program, and we request CALFED funding for the program.

Approach/Tasks/Schedule: Our strategy has been to collect background information on the site before it was filled with dredged material by measuring flow conditions and surveying across the tidal creek bayward of the restored area. The same data were collected during the consolidation period and after the levee was breached. These data will be analyzed to determine the nature and magnitude of change to the creek. Expected products include reports that relate water conditions to tidal-channel development and a description of the equilibrium channel configuration and time it takes to reach that state.

To monitor the flow, we installed two multi-sensor hydrological instrument packages to routinely measure water temperature, tidal change, channel flow, suspended sediment concentration, and conductivity. One package was located in the tidal creek, and the other was located immediately offshore of the creek mouth. We also maintained a four-anemometer meteorological station at the site. As events dictate, we surveyed across the tidal creek . We propose to continue those measurements until the tidal creek reaches a configuration whereby it stops changing size.

Project Justification and Funding by CALFED: The primary justification for this study is that wetlands' health and restoration are major concerns within the San Francisco Bay estuary, yet little is known about the potential for success of different restoration methods. Human activity within the estuary has produced a huge loss of habitat for the wildlife and fish species that use the wetlands during breeding and maturing stages. Furthermore, the remaining 5 % of the tidal wetlands that existed 150 years ago (~125 sq km), are threatened by development, erosion, pollution, and sea-level rise. To preserve a viable wetland habitat within the estuary, management agencies are developing strategies for wetland restoration in areas that are now diked farmland or salt evaporating ponds. This has resulted in the first major wetland restoration endeavor, the Sonoma Baylands Project, that uses dredged material (from the Oakland Estuary) to expedite wetland development. Project designers hope that this will be a model for future wetland restoration. Our research focuses on determining the morphodynamic processes that affect the existing wetlands bayward of the site; so far, we have observed changes in tidal-creek cross-sectional area that are related to restoration activities.

Budget Costs and Third Party Impacts: We estimate that this study will require a yearly staffing level of one full-time-equivalent, which will be divided amongst the two scientists, a development engineer, an electronics technician, and a data-analysis specialist, and one technician, who will be hired through the Environmental Careers Organization. Annual O/E costs will be on the order of $50,000. We request that CALFED fund all the O/E, 60% of the salary, and a 30% USGS assessment.

Applicant Qualifications: Both chief scientists have conducted many hydrodynamic studies in shelf, nearshore, and wetland environments and have participated in San Francisco Bay wetland research during the past four years.

Monitoring and Data Evaluation: The main emphasis of this program is to monitor changes to the tidal creek by measuring hydrodynamic, meteorological, and cross-sectional parameters. Data will be analyzed in house and submitted to clients as useable data sets and reports and will be presented to the scientific and management community through refereed papers.

Local Support ...: In the past we have worked with other members of the U.S. Geological Survey, the San Francisco Bay Conservation and Development Commission (BCDC), the Coastal Conservancy, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and Phillip Williams and Associates. We plan to continue working with those agencies, and look forward to working with other interested groups. This study will be conducted in a CALFED priority habitat in north San Francisco Bay and supports the CALFED focus on monitoring wetland processes and the ecological impact of wetland restoration on existing tidal wetland.